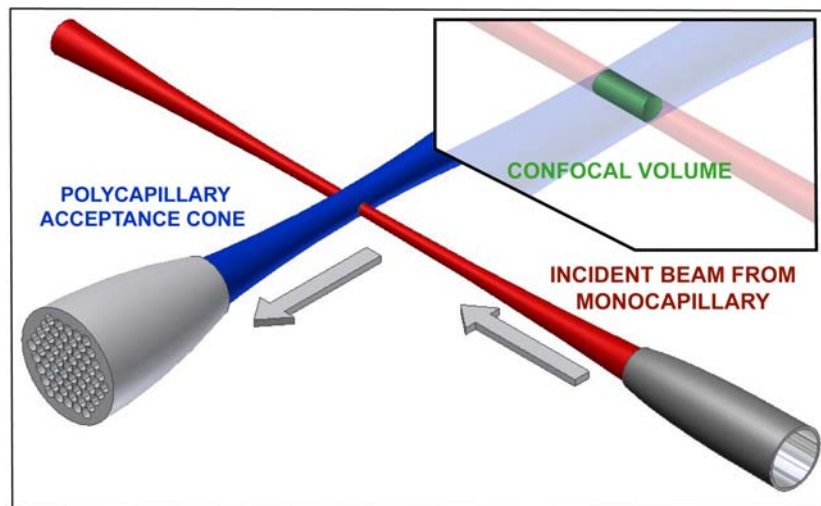
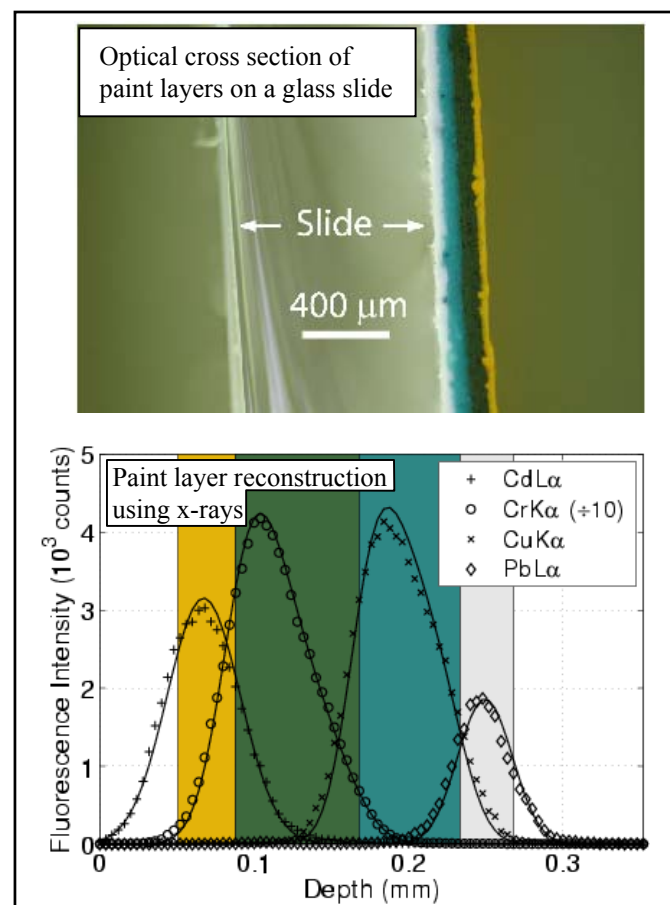


Development of a confocal x-ray fluorescence microscope for characterization of buried layers in historic paintings

Arthur Woll, Don H. Bilderback, Sol M. Gruner (CHESS, Cornell University), and Jennifer Mass (University of Delaware and The Winterthur Museum) -- **DMR-0225180**



CHESS scientists have worked with art conservationists and students to show the feasibility of a new state-of-the-art x-ray microscope for 3D elemental characterization of buried layers in antique paintings and other layered materials. The study proved that it is possible to nondestructively determine the color of buried pigment layers, and therefore to see paint layers underneath the top surface.



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This project represents a collaboration among Cornell University, the Cornell High Energy Synchrotron Source, the University of Delaware, and the Winterthur Museum. It will result in a valuable resource for students, art conservators, and materials scientists alike.



University of Delaware art conservation student Christina Biscula and Staff Scientist Arthur Woll at CHESS station D1



17th C. Dutch portrait by Matthias Stomer. Outstanding questions regarding Stomer's modeling techniques have been proposed for examination using the confocal x-ray microscope.